

THE DER WEEKLY

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Industry News

GM, Giner Expand Fuel Cell Development

General Motors and Giner, Inc., an electrochemistry research and development company, have announced that they will expand their fuel cell development beyond transportation applications. The companies plan to conduct research on hydrogen generation for refueling systems and regenerative fuel cell units for stationary power applications. GM and Giner created Giner Electrochemical Systems last year to accelerate fuel cell development. Byron McCormick, GM global alternative propulsion center director, stated that GM sees "a clear opportunity for hydrogen in the future to be produced with renewable resources." The joint effort will continue to focus on the development of high-pressure, high-power electrolyzers.

Fuel Cells Today, October 22

US Coast Guard Station to Receive Fuel Cell

FuelCell Energy, Inc., last week announced that it received an order from PPL Spectrum, Inc., to purchase a 250-kW direct fuel cell power plant that will be installed at the U.S. Coast Guard Station Cape Cod in Bourne, Massachusetts. PPL will develop the facility and install the unit, most likely in the first half of next year. The fuel cell will provide electricity and heating to the base. Mike Walz, Coast Guard Research and Development Center, stated that he is "hopeful that this fuel cell will prove to be a reliable power source for the air station, reduce their overall energy costs and serve as a model for future installations at other Coast Guard units." The National Energy Technology Laboratory, The Massachusetts Renewable Energy Trust, and Keyspan, Inc., are providing support for the \$1.7 million project.

FuelCell Energy Press Release, October 18; Eyeforfuelcells Weekly, October 24

Altair Files Patent for Nanotechnology

Altair Nanotechnologies, Inc., a supplier of nanomaterials, announced on October 26 that it has filed for a patent on its process for making microporous structures used as catalyst supports for use in fuel cells, sensors, electrochemical cells, reactive filters, and similar applications. Bruce Sabacky, Director of Research and Engineering and Alternative Energy Programs for Altair, stated that the process "embodies the conversion of nanomaterials to both porous and dense layers of the fuel cell structure." Altair has filed six patent applications in the past two years and is developing nine additional technologies.

Altair Press Release, October 26 (www.aitlairint.com)

Policy News

CA Enacts Distributed Wind Systems Bill

Earlier this month, California Governor Gray Davis signed a bill to ease siting and permitting processes for small wind systems for homes and businesses. The legislation, AB 1207, overrides local and county ordinances that have impeded installation of small wind turbines. The new law requires cities and counties to enact less restrictive ordinances before July 1, 2002. For detailed bill information, go to www.leginfo.ca.gov, select "Bill Information," and enter "AB 1207."

www.energycentral.com

NYPSC Approves DG Pilot Program

The New York State Public Service Commission (NYPSC) announced on October 24 that it approved a three-year distributed generation (DG) pilot program, which establishes a process for utilities to approve contracts for the installation of DG units. Commission Chairman Maureen O. Helmer stated, "by making it easier for customers to generate their own electricity, we reduce the demands on the local utility system and improve the system's efficiency." The Commission also approved a protocol for standby rates in a separate decision on the same day. For details on these Commission Cases, 00E0005 and 99E1470, visit www.dps.state.ny.us.
NYPSC Press Release, October 24



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By the Numbers

Demand-Side Management

- 50.5 billion kWh in energy savings in 1999 from demand-side management programs
- 24.8 billion kWh in energy savings in 1991 from demand-side management programs
- 1.42 cost in billion \$ for DSM programs (1999)
- 1.80 cost in billion \$ for DSM programs (1991)

Source: Annual Energy Review 2000

*The California Fuel Cell Partnership released a market study, Bringing Fuel Cell Vehicles to Market: Scenarios and Challenges with Fuel Alternatives," on October 16.**

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Micro-Fuel Cells for Portable Applications

It seems technology devices are getting smaller by the day. Cell phones, personal organizers, video game systems, and beepers all fit into the palm of a hand. With the shrinking size of these devices comes the need for smaller and more powerful batteries. However, their limited charge capacity can hinder performance; with added functions and faster micro-processors, handhelds increasingly need a reliable source to power them.



Enter micro-fuel technology. Micro fuel cells typically measure one inch square and less than one-tenth of an inch thick and run appreciably longer than today's batteries before requiring a new fuel supply. Refueling can be done by replacing the cartridge, or ampoule, of ethanol or methanol, which is about the size of a pen tip.

The notion of using fuel cells for portable applications is not novel. It has been in the research and development phase for years; commercialization is now just over the corner. Ballard Power Systems recently announced the commercial launch of its Nexa (TM) power module - the world's first volume-produced proton exchange membrane (PEM) fuel cell system. The fuel cell generates up to 1200 watts of unregulated DC electrical power and has a wide variety of industrial and consumer end-product applications.

Motorola is making strides to develop and commercialize its direct methanol fuel cell, which has been lab tested to run for a week at a time without degradation of performance. Anne Stuessy of Motorola Labs says it will be at least two years before a fuel cell product will be ready for consumer use. Before that can happen, she says, they have more research to do on components of the fuel cell device, as well as developing ways to package and supply the fuel and establishing standards and regulations for the technology.

Sources: *Eye For Fuel Cells* www.eyeforfuelcells.com; *Business Wire*, Sept. 27, 2001

DOE News

STEAB Fall Meeting

The Department of Energy's State Energy Advisory Board (STEAB) held their Fall Meeting in Oak Ridge, Tennessee, on October 25-26. The Oak Ridge National Laboratory hosted the event and provided a tour of the CHP Laboratory. Mike Karnitz delivered a presentation to the board on the distributed energy resource work being done in Oak Ridge. Maruice Kaya of Hawaii, Chairman of STEAB, discussed his involvement in a Hawaiian DER project.

EPRI Distributed Resources Meeting

Debbie Hought gave a presentation on the Office of Distributed Energy Resources (DER) programs at an EPRI Distributed Resources Meeting in Knoxville, Tennessee, on October 16. EPRI staff and utility representatives involved in EPRI's Distributed Resources programs attended the meeting. Mike Karnitz of Oak Ridge National Laboratory gave an overview of DER activities and hosted a tour of DER facilities at Oak Ridge National Laboratory including the Combined Heat and Power Laboratory and the High Temperature Materials Laboratory.

Cornell's Auction Experiment Findings

Dr. Robert Thomas presented results from Cornell University's electric energy auction experiments to an audience of approximately 50 people at the Federal Energy Regulatory

Commission (FERC) on October 26. These experiments show how market designs to buy power do not always give the intended results. Cornell is performing this work for the Transmission Reliability program through their participation in the Power Systems Engineering Research Center, which is in the Consortium for Electric Reliability Technology Solutions. Typically, six participants can earn money in the auction experiment by successfully bidding against one another into selected market structures from generators assigned to them. One of the experiments shows that bidding demand response into the market will curtail generator market power. A spirited discussion followed the presentation, with the key question, what should FERC do to mitigate market power in the near-term until load response, distributed generation, and better market structures are in place?

Regional Office News

Texas Renewables 2001 Conference

The Texas Renewable Energy Industries Association (TREIA) is hosting this year's Texas Renewables 2001 conference in Abilene, Texas. The conference will address topics such as the growth in Texas wind fields, electric transmission infrastructure, the increasing role landfill methane is playing; markets for smaller-scale solar, wind and geothermal

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technologies, and renewable transportation fuels. The featured speaker is State Representative Steve Wolens, Chair, House State Affairs Committee, Recipient of the 2001 TREIA Legislator of the Year Award.

Midwest Natural Gas Workshop

The Chicago Regional Office is sponsoring a Midwest Natural Gas Workshop entitled "Dealing with Price Volatility." The purpose of the one-day workshop is to provide an update on the natural gas industry including

supply, demand, and price forecasts and to discuss risk management strategies for purchasing natural gas. Attendees will include State Energy Offices, Public Utility Commissioners, and various natural gas utilities. Speakers include representatives from the Energy Information Administration; Goldman Sachs, Public Utility Commissions from Missouri, Michigan, Wisconsin, and Illinois; and utilities including Peoples Gas. Gary Nowakowski and Bill Hui will facilitate the meeting at the Marriott Airport Hotel in St. Louis, Missouri.

Calendar of Events

As always, please check with event sponsors to confirm date and location of all events. If your organization's event is postponed or cancelled, contact Brian Marchionini at bmarchionini@energeticsinc.com.

OCTOBER 2001			
28-Nov. 2	2001 IEEE/PES Transmission and Distribution Conference and Expo	Atlanta, GA	www.ieeet-d.org
29-30	Reliability-Focused Energy Efficiency Conference: Lessons Learned in 2001	Berkeley, CA	www.aceee.org
NOVEMBER 2001			
1-2	3rd Annual International Symposium on Distributed Energy Resources	San Diego, CA	www.cader.org ; Robert Dixon, Deputy Assistant Secretary, Office of Power Technologies invited to speak
1	U.S. Advanced Ceramics Association Meeting	College Park, MD	Lara Neer; 202-293-6253
1-2	3rd EPRI Powering the Digital Economy Workshop	San Francisco, CA	pkeebler@epri-peac.com ; 865-218-8015
1-4	World Congress for Hydrogen Economy	Denver, CO	www.hydrogennow.org
5-6	Clean Air Technologies 2001	Anaheim, CA	www.aqmdconferences.org
6	NAESCO DG Conference	Miami, FL	www.naesco.org/conference.htm
6-7	Empire Energy & Environment Expo	Albany, NY	info@eba-nys.org
6-7	14th NREL Industry Growth Forum	San Jose, CA	Sara Huntly, 303-275-4317
7	Ohio Fuel Cell Technology Symposium	Cleveland, OH	www.cesnet.org
7-8	Demand Response Programs: Results, Status and Future	Washington, DC	Peak Load Management Alliance Fall Conference www.aesp.org/forms/form.cfm?id=14
7-9	NAESCO 18th Annual Conference	Miami, FL	www.naesco.org/conference.htm
11-14	113th NARUC Annual Convention	Philadelphia, PA	www.naruc.org
12-14	Fuel Cells for Stationary, Automotive and Portable Apps.	Fort Lauderdale, FL	Florida Educational Seminars, (561) 367-0193
13-14	Oil Heat Roadmap Meeting	College Park, MD	jbrinch@energetics.com
14-15	Energy Storage Program Review	Arlington, VA	jblais@sentech.org ; Dr. Imre Gyuk (202) 586-1482
27	Illinois Wind Workshop	Lisle, IL	www.eren.doe.gov/cro
27-28	Business for Fuel Cells for Stationary Applications	Brussels, Belgium	www.eyeforfuelcells.com
28-29	Business Energy Solutions Expo	Orlando, FL	www.aeecenter.org ; www.tecoenergy.com
28-30	DER Conference and Peer Review	Washington, DC	cs@energeticsinc.com

Calendar of Events

DECEMBER 2001

3-4	4th Business Case for Opportunity and Investment in Fuel Cells	Miami, FL	www.cbnet.com
3-5	Next Generation Turbine and Condition Monitoring Conference and Workshop	Galvestone, TX	www.netl.doe.gov
5-7	4th Annual Interactive Energy Conf.	Houston, TX	www.interactiveenergy.com/2001
11-13	Power-Gen International	Las Vegas, NV	www.pennwellevents.com
11-12	Workshop on Interconnecting Distributed Generation	Honolulu, HI	mtome@dbedt.hawaii.gov or call: 808-587-3809; www.state.hi.us/dbedt/ert

JANUARY 2002

14-15	Material Technologies for Fuel Cells and Power Electronics	Cocoa Beach, FL	www.ceramics.org/meetings/ECD2002/expo.asp
17-18	Annual Workshop on Microturbine Applications	College Park, MD	Sandra Maldonado maldonadosl@ornl.gov
28-Feb.1	Distributed Power Program Annual Review Meeting	Arlington, VA	kimberly_taylor@nrel.gov
29-Feb.1	Reducing Your Energy Costs Conference and Exhibit	New Orleans, LA	Stuart Steller, 781-939-2411, s.steller@cbnet.com

FEBRUARY 2002

27-Mar 1	DistribuTECH	Miami Beach, FL	www.pennwellevents.com
2	Distributed Resources, Renewables and the Environment	Portland, OR	newsdata@newsdata.com; 503-230-5884 (Bonneville Power Administration)
6-7	Fuel Cell Dynamics: Reality, Not Hype	New York, NY	www.alliedworld.com
11-13	NASEO 2002 Energy Outlook Conference	Washington, DC	www.naseo.org/events/default.htm
20-22	New and Emerging Technologies Conference	Tucson, AZ	www.nreca.org/edu_events/conferences/newtech/html/conference.html

MARCH 2002

11-13	6th Annual Distributed Generation & On-Site Power Conference	Atlanta, GA	www.dist-gen.com ; 508-427-9470; gesi@mediaone.net
17-21	EPRI's 7th Distributed Resources Conference and Expo	Dallas, TX	lgoldie@epri.com
19-21	Electric Power 2002	St. Louis, MO	www.electricpowerexpo.com
20-23	Building Energy Conference	Medford, MA	www.nesea.org ; 877-44SOLAR, ext. 20